



AP5 – Stormwater Materials

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AP5 Stormwater

5.1 Approved Materials

Stormwater materials shall be as defined in the attached list.



STORMWATER MATERIALS & FITTINGS					
Notes: All parts of the stormwater water reticulation system shall be designed using components and materials that comply with AS/NZS Standards					
	Category / Material	Standard	Comment	Application	Manufacturer
1	Stormwater Pipe		<ul style="list-style-type: none"> • Primary mains:- larger than 225mm • Reticulation mains:-225mm minimum • Lateral/connection:- 100 & 150mm 		
1.1	Reinforced concrete pipe	NZS3107:1978 -soon to be replaced with the following AS/NZS4058:2007		All primary mains	
1.1.1	Rubber ring joint				Humes (licence # 2618) Hynds (Licence # 2586)
1.1.2	Flush jointed pipes		Not generally accepted.	Specific approval and design	
1.1.3	Skid ring joint		Not generally accepted	Specific approval and design	Hynds (Licence # 2586)
1.1.4	Roller compacted pipes				Humes 'Titan' Brand (Licence #2618)
1.2	Spiral-welded steel pipe Internal linings include concrete only.	NZS4442:1988 or AS1579:1993	Polyken YG111 external wrapping or Polyken Synergy wrapping	Specific design Structural mains	Steelpipe NZ Ltd



1.3	Ductile iron Class K9 /K12	AS/NZS 2280:2004 & amendments.	Light cement lined with Tyton joints. External protection with green sleeve Generally suspended pipes and high structural loadings	Specific design Structural mains	Tubemakers, Australia (as supplied by Humes) (licence #2029)
1.3.1	Ductile Iron Pipe Light Cement lined TYTON EXCEL PN20 & PN35	AS/NZS 2280:1995 & amendments	With Tyton joint elastomeric seals & socket / spigot joints (with blue polyethylene sleeve)	Specific design Structural mains	Tyco Tyton Excel (Licence #SMK0883)
1.4	Polypropylene (PP) Twin- wall pipe	AS/NZS5065	Rubber ring joint	Specific Design	Hynds or Waters & Farr -'Stormboss'
1.5	uPVC pipes (Solid wall) & fittings for gravity applications	AS/NZS 1254:2000		Reticulation mains and lateral/ connections	Iplex (Licence #1697) Marley (Licence # 2365) Keyplas (Licence #2622)
1.6	Polyethylene pipe (PE) for gravity PE100 SDR17 or PE80, SDR 17 (minimum SN16)	AS/NZS 4130,4131 and 5065.	Pipes will be butt welded in accordance with the manufacturer's recommendations, & the standard coloured black with inner core colour white/grey or brown. Electrofusion couplings are not generally accepted.	Specific design situations.	Iplex (Licence #) Marley (Licence #) RX Plastics (Licence #)
1.7	Corrugated aluminum or galvanized steel pipe		Not generally accepted for urban design use. Specific design option only.	Specific design option	
1.8	Novaflo/ novacoil or similar pipe for subsoil situations		Specific design use for groundwater control.		



2.0	Seal Rings	Comply with AS 1646.1:2000:	Elastomeric seals for wastewater purposes.		Iplex (Licence #SMK1174)
3.0	Fittings				
3.1	i) Cast iron socket & spigot fittings ii) Cast iron flanges	i)AS/NZS 1830 & AS/NZS 2544:1995 ii)Table D & coated to AS/NZS 4158:1996 & amendments.	Rated at PN16 or higher. Epoxy coated		Gillies
3.2	i) Ductile iron pipe flanged, socket & spigot fittings to with ii) Flanges	i)AS/NZS 2280:1999 ii) to Table D or raised, faced & drilled to AS 4087, & coated to A/NZS 4158:1996 & amendments			Crevet Griptite (Licence #943 & 950) Humes (Licence #2029) Surecast Tyco tyton joint (Licence #PRD/R61/0412/1
3.3	Stand alone flanges	Table D coated to AS/NZS 4158:1996 & amendments	Ductile or Cast iron		Unflanged adaptor - Di (as supplied by Steel & Tube NZ Ltd)
3.4	Bolts, nuts & washers to be hot-dipped galvanised are an alternative to 316 stainless steel.	AS/NZS 1111 & 1112	ISO metric hexagon commercial bolts & screws & ISO metric hexagon nuts, including thin nuts, slotted nuts & castle nuts".		Ajax



3.5	Stainless steel bolts, nuts & washers are the preferred acceptable fastenings provided that they are 316 grade stainless steel with factory applied molybond coating	Complying with AS 1252:1983 – High Strength Steel Fastenings	This particularly applies for use in corrosive soil conditions		
3.6	<p>Gibaults</p> <ul style="list-style-type: none"> - Cast iron (coating as per standard) - M16 316 stainless steel, (with clips fusion coating as per standard) 	<p>4158:1996 & amendments Coating to ASTM A276</p> <p>AS/NZS 4158</p>	<p>Use 316 Grade Stainless steel bolts . Preference</p> <p>Use 316 stainless steel fasteners</p>		<p>Gillies Viking Johnson Ltd – Maxifit (with Sheraplex coated bolts) Crevet Milnes Pty Ltd</p> <p>Tyco Vari-Gib</p>
3.7	PE Fittings				<p>Durafuse (Licence #9603049) Iplex – Plasson Marley – Philmac (Lic #1271) Marley – Pushlok (Lic #1494) Plasson (Licence #1494 & 1271) Plastic Systems – Alprene A16 Easygrip (Licence #1157) PPI Corporation – GF – Compression fittings (Licence #1157)</p>



4.0	Manholes				
4.1	1050mm to 2500mm id with precast base.				Humes Hynds
4.2	Concrete lid(flat top) with 550mm and 600mm openings				Humes Hynds
4.3	Manhole sealant , flexible jointing compound BM100 or SM9020				Hynds Humes
4.4	Steps: hot dipped galvanized steel safety step or 316 grade stainless steel				Humes Hynds Costavic
4.5	Plastic encapsulated stainless steel safety step	A/NZS1657:1992, AS4198:1994			Nextep license #jp-JQA-QM6570
4.6	Cast iron manhole covers and frames: 600mm diameter	BS EN 124 vehicle loading or AS3996 - 80kn loading	Heavy duty /non rock		Humes Hynds Gatic
4.7	Ductile Iron Manhole cover and frames	AS 3996 Class D (210kN)	615mm clear opening		Webforge
4.8	Manhole connectors				
4.8.1	PVC		Proprietary units only		Iplex Solo plastic
4.8.2	PE		As per acceptable solutions drawing		



5.0	Fittings uPVC	As/NZS 1260 :2002	RRJ fitting only to be used.		Iplex (Licence #SMK1174) Marley (Licence # WMKA20224) Keyplas (Licence #)
5.1	Rubber Sleeves	AS/NZS4326:1995	All couplings used shall have a central 316 Stainless steel sheer band	Reticulation pipes (non pressure)	Fernco
6.0	Inlet			Specific design	
6.1	Scruffy dome			Specific design	